Amendments to the Specification:

Please add the following new paragraph on Page 1, above line 1:

--CROSS REFERENCE TO RELATED APPLICATIONS

Applicants claim priority under 35 U.S.C. §119 of German Application No. 103 00 776.8 filed January 11, 2003. Applicants also claim priority under 35 U.S.C. §365 of PCT/EP03/14210 filed December 13, 2003. The international application under PCT article 21(2) was not published in English.--

On Page 1, for the last full paragraph, please replace with the following rewritten paragraph:

--In the case of lattice accelerators, the positively charged ions are extracted from a plasma, by means of a grid system in which a first lattice that borders on the plasma chamber lies at an anode potential, and a second lattice that is offset in the beam exit direction lies at a more negative cathode potential. Such a system is known, for example, from U.S. 3,613,370. The ion stream density of such an accelerator system is limited to low values by means of space charging effects.--

On Page 2, for the first full paragraph, please replace with the following rewritten paragraph:

--Another construction form provides for a plasma chamber, which has an electrical field passing through it, for one thing, to accelerate positively charged ions in the direction of a beam exit opening, and a magnetic field passing through it, for another, for guidance of electrons, which serve to ionize a neutral working gas. In particular, accelerator systems having a ring-shaped plasma chamber, in which the magnetic field runs predominantly radially, and electrons move on closed drift paths, under the influence of the electrical and magnetic fields, ~~electrical and magnetic fields on closed drift paths~~, have been in use for quite some time. Such an accelerator arrangement is known, for example, from U.S. 5,847,493.--

On Pages 12-13, for the paragraph bridging pages 12 and 13, please replace with the following rewritten paragraph:

--The wall surfaces of the chamber wall can consist of electrically insulating material, or of electrically conductive material, or also partly of electrically conductive material, particularly metal that cannot be magnetized. In a preferred

embodiment, the wall surfaces $WF2i_N$, $WF2e_N$ are metallic and the wall surfaces $WF1i_N$, $WF1e_N$ are insulating. The metallic wall surfaces can then advantageously form intermediate electrodes at intermediate potentials between the potentials of an anode and a cathode, as parts of the electrode arrangement, whereby the intermediate potentials can be predetermined or, in the case of insulated, non-contacted intermediate electrodes, can adjust themselves in operation, in sliding manner. In the case of metallic wall surfaces $WF2i_N$, $WF2e_N$, it can also be provided, in particular, that metallic electrodes are set onto or into an essentially cylindrical insulating chamber sleeve, and fixed in place there, or form the wall surfaces $WF2i_N$ and $WF2e_N$, respectively, with their surfaces that face away from the chamber sleeve and towards the ionization chamber and the opposite wall surface.--